

**Fig. 1**

**Fig.2**

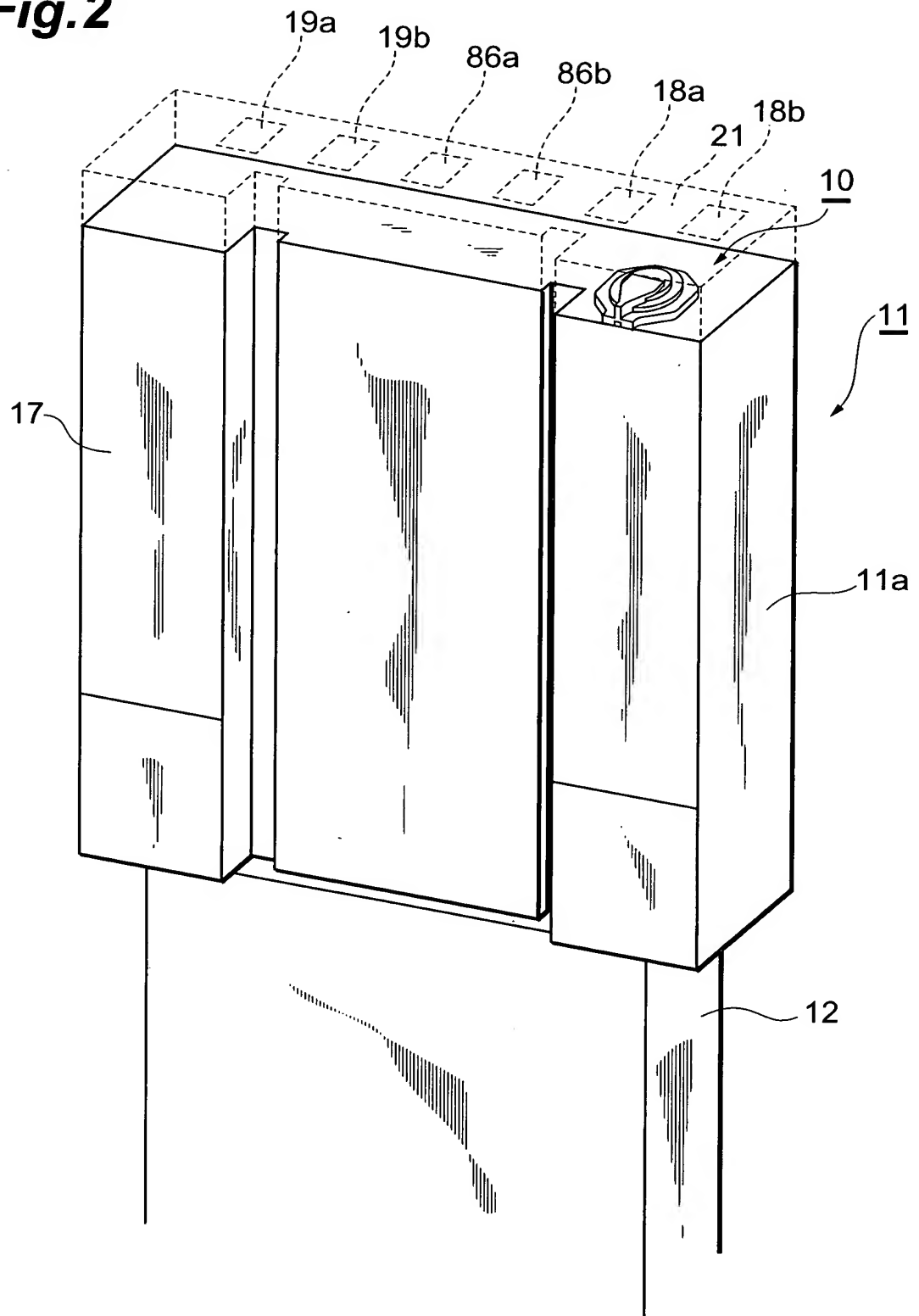
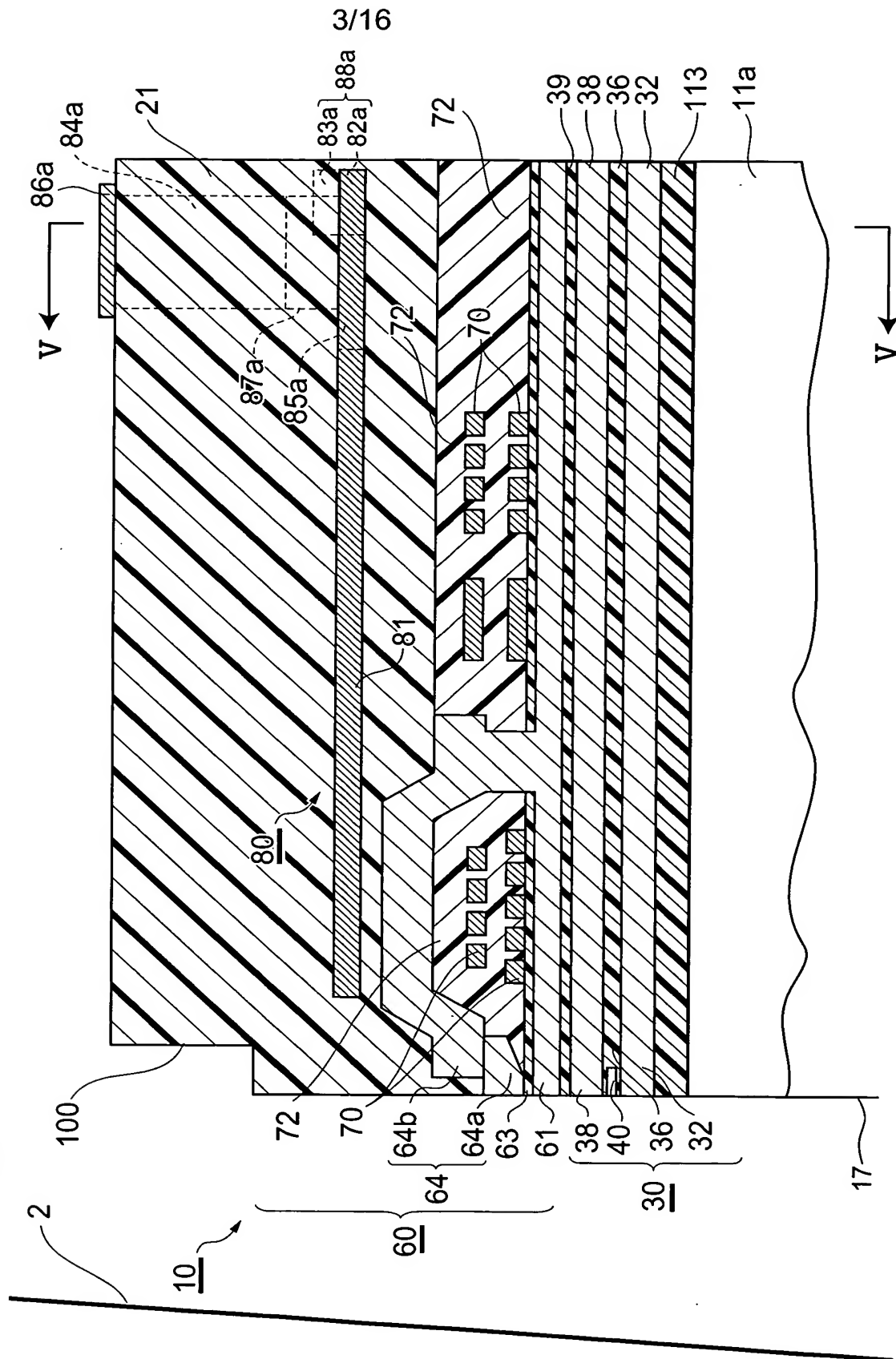
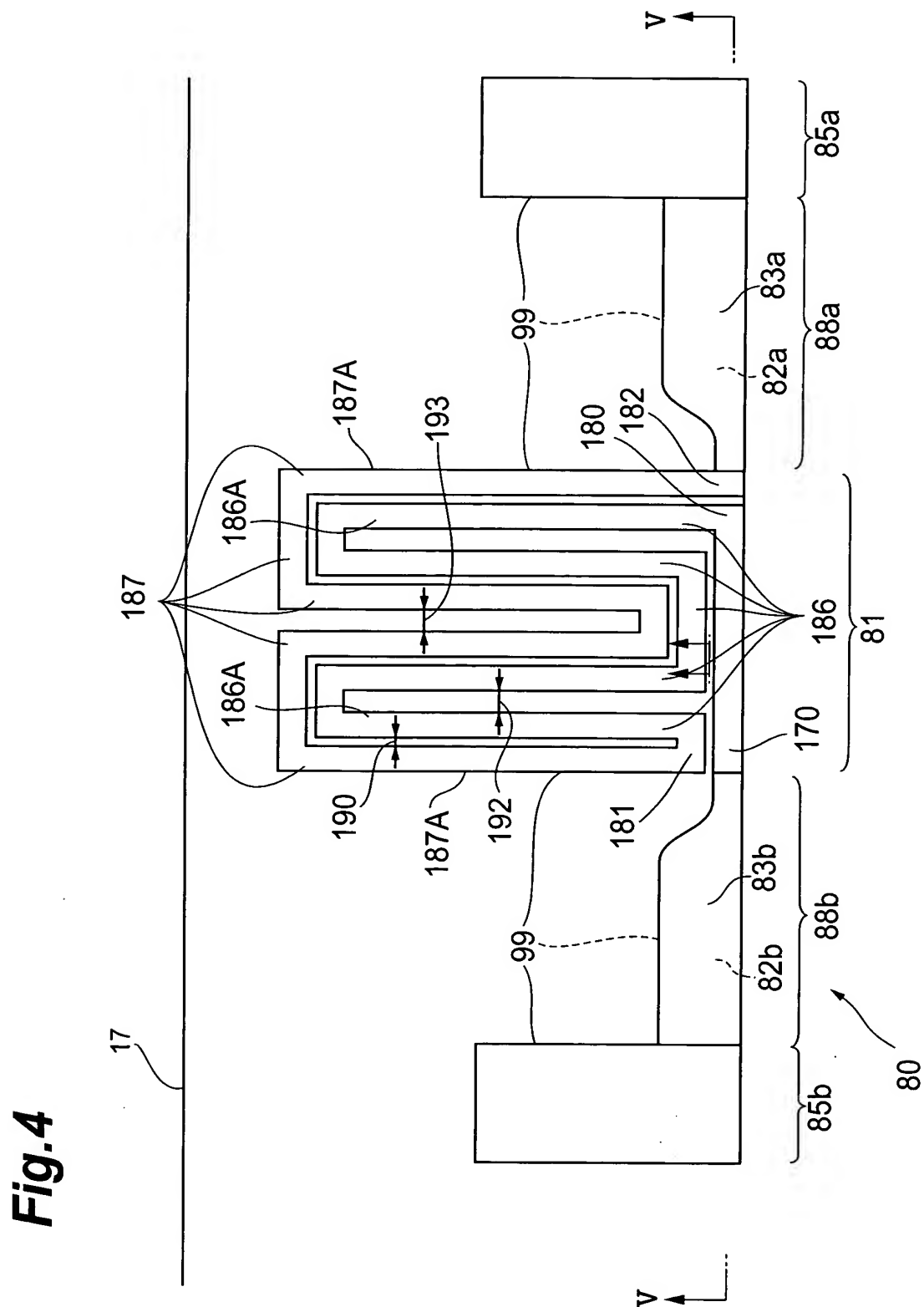


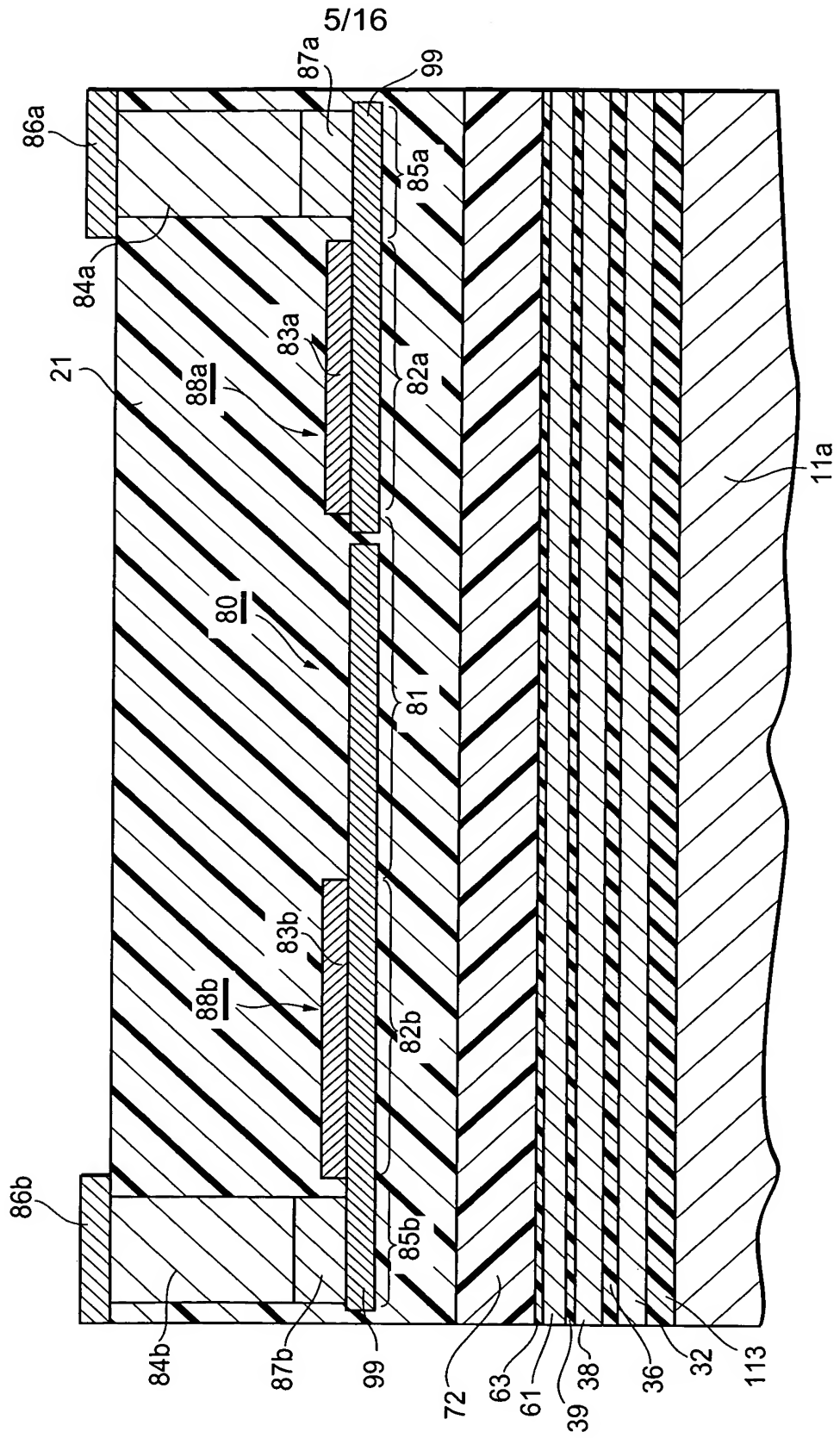
Fig.3



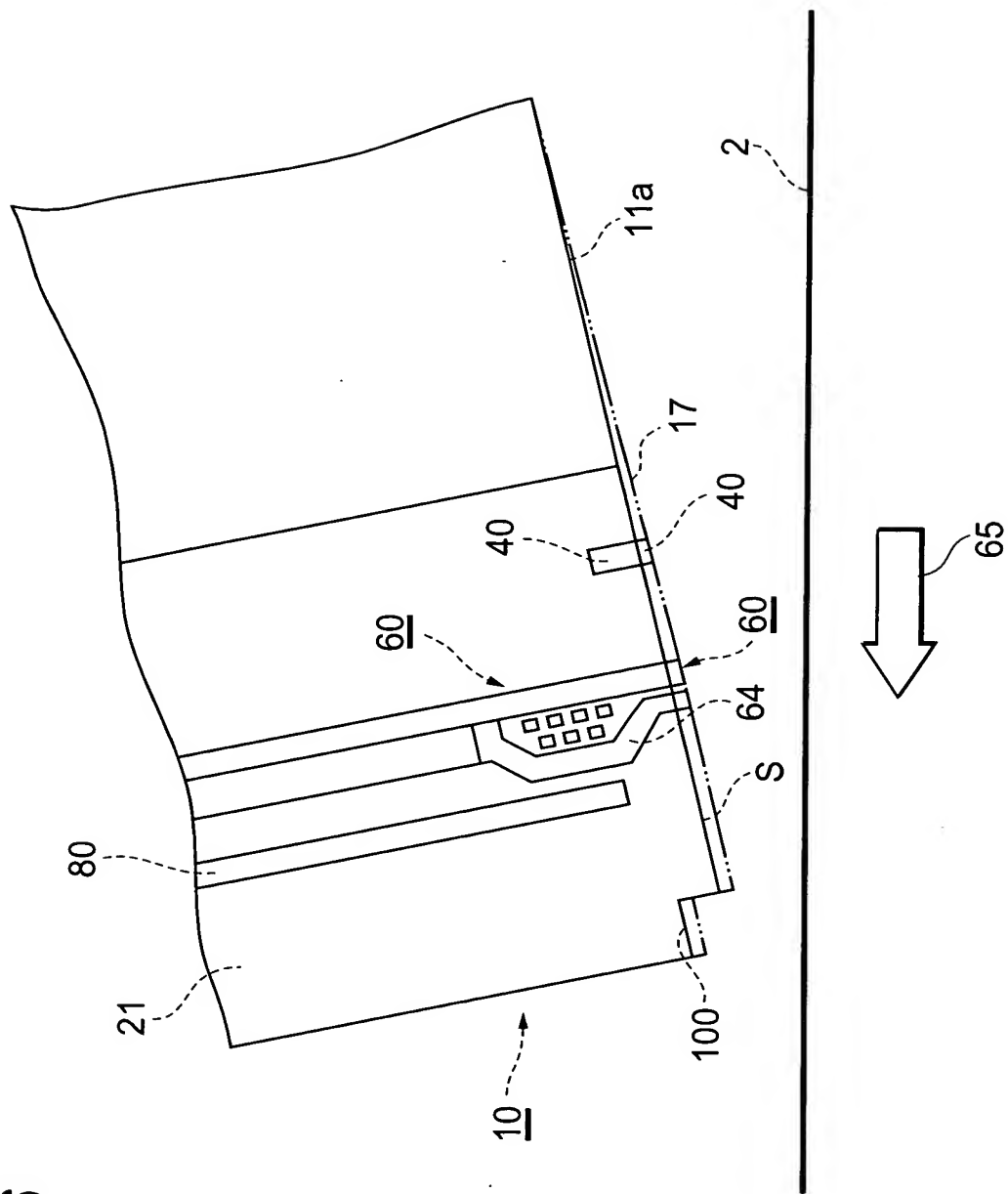


**Fig. 4**

**Fig. 5**



**Fig.6**



**Fig. 7**

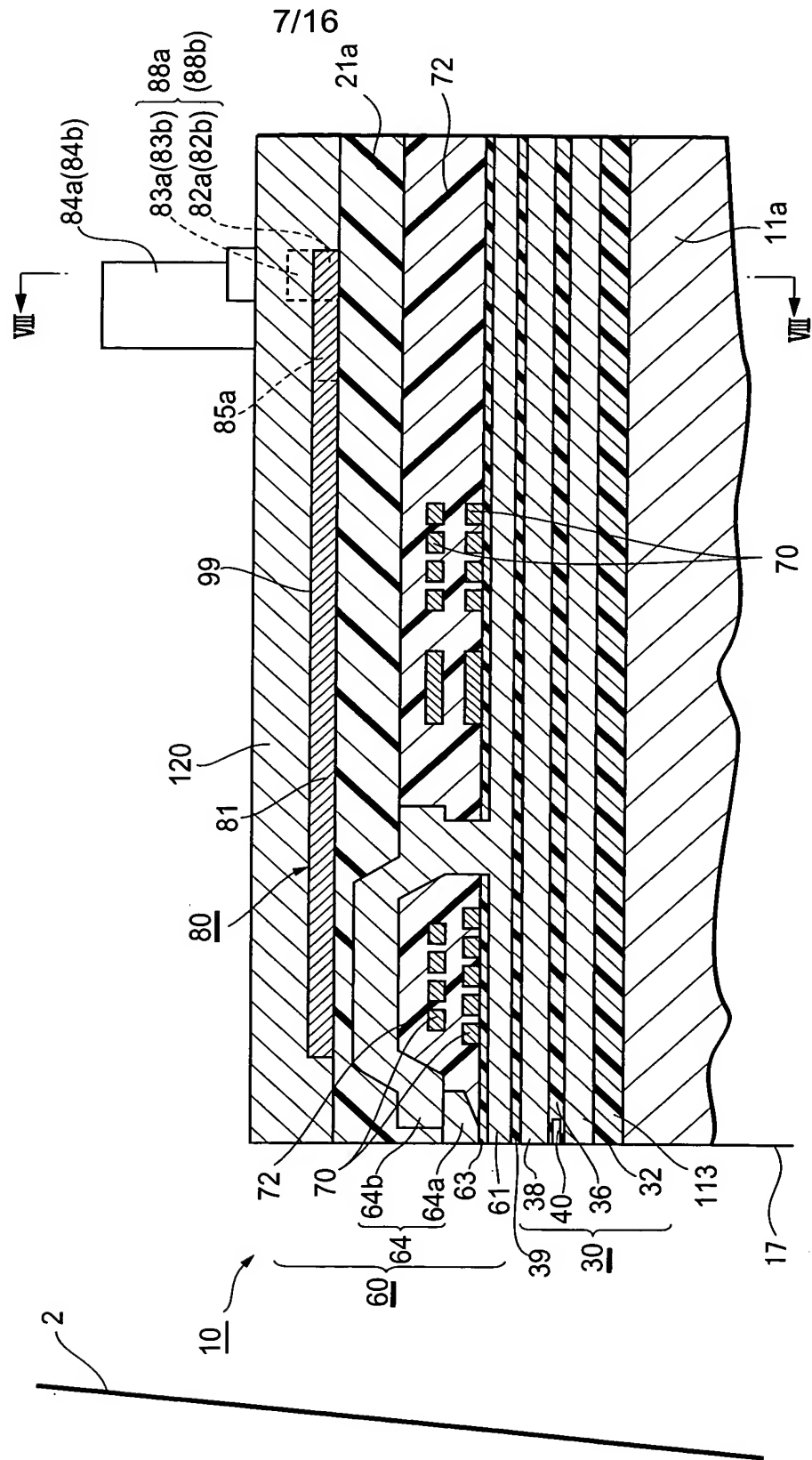
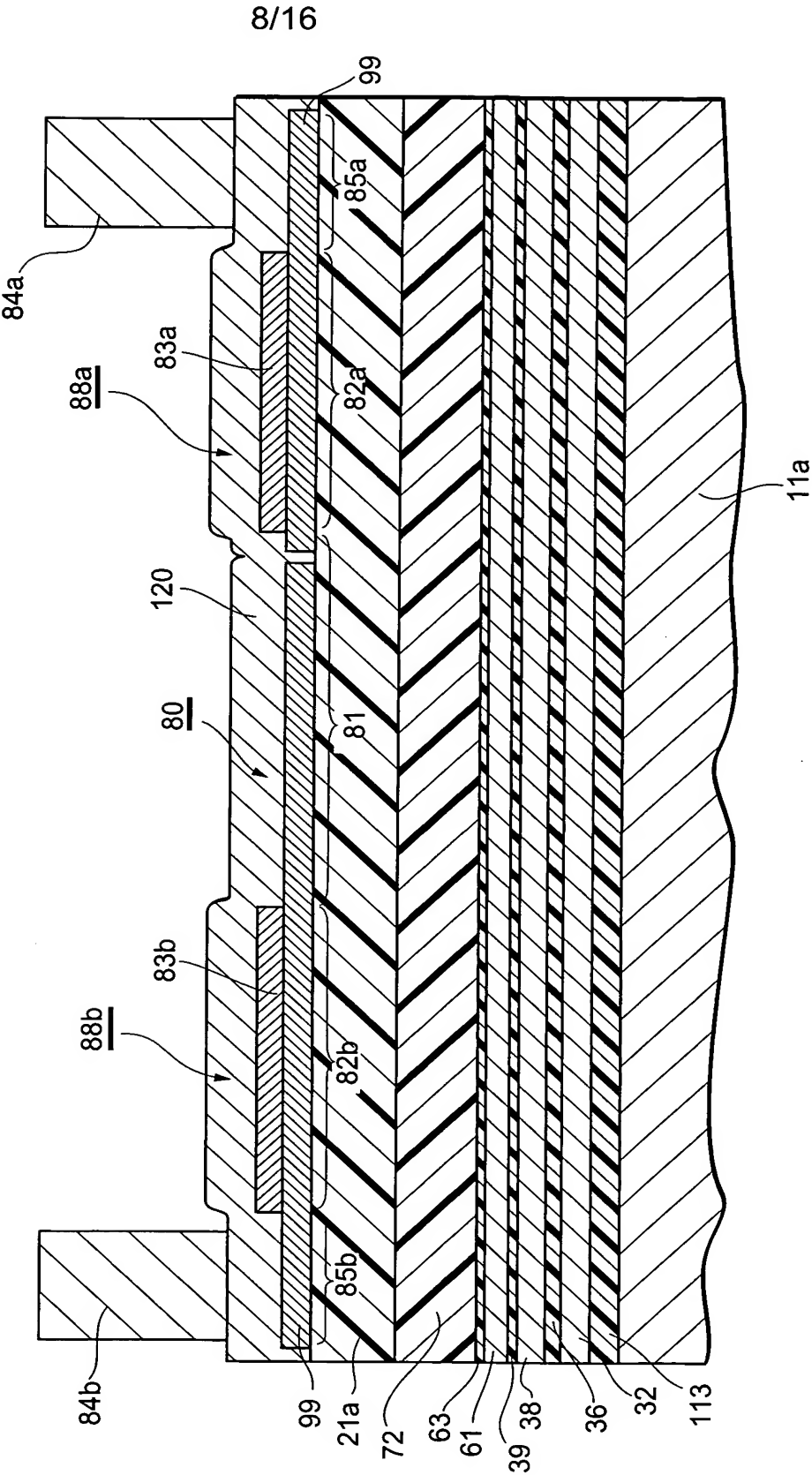
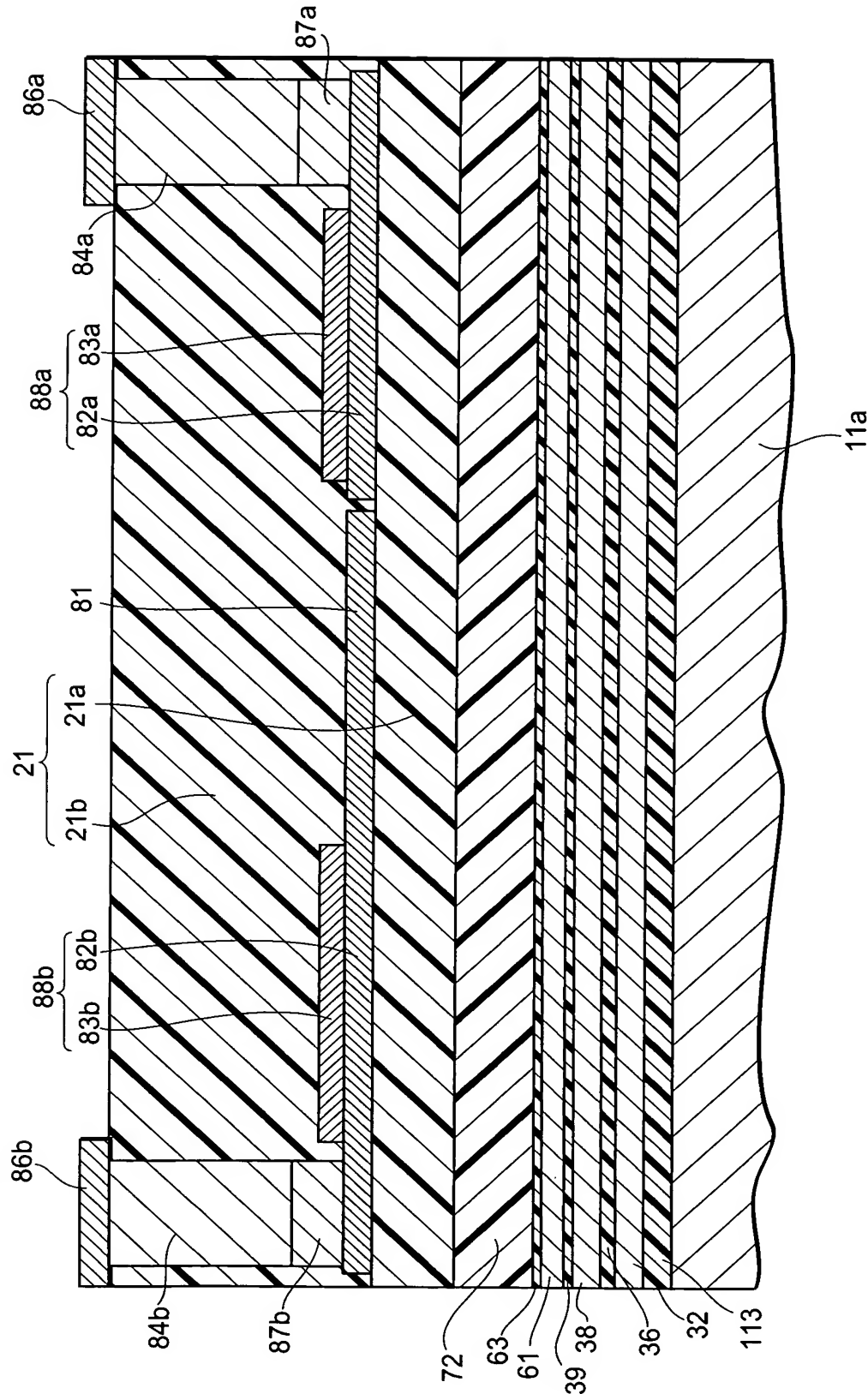


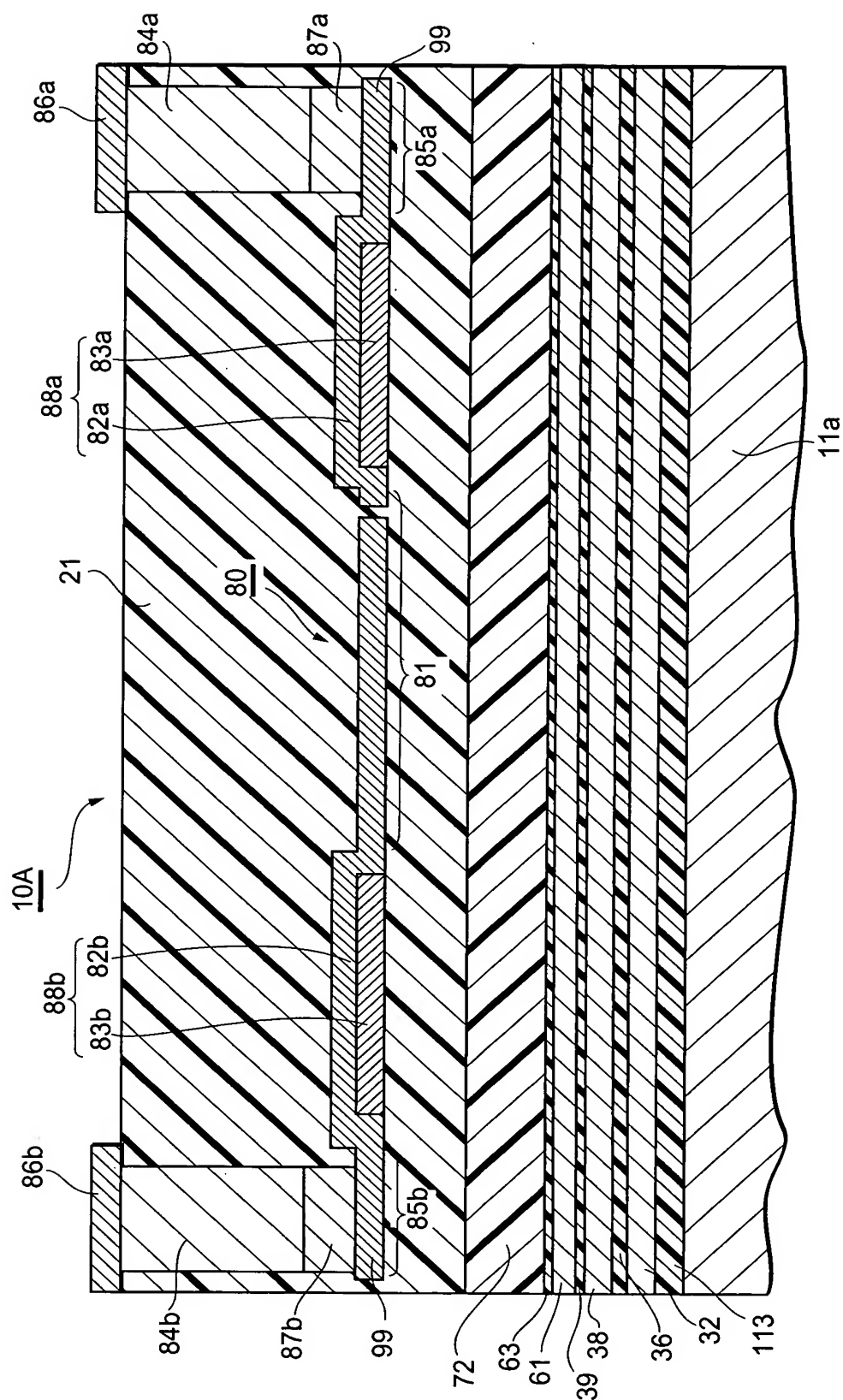
Fig.8





**Fig.9**





**Fig. 10**

Fig.11

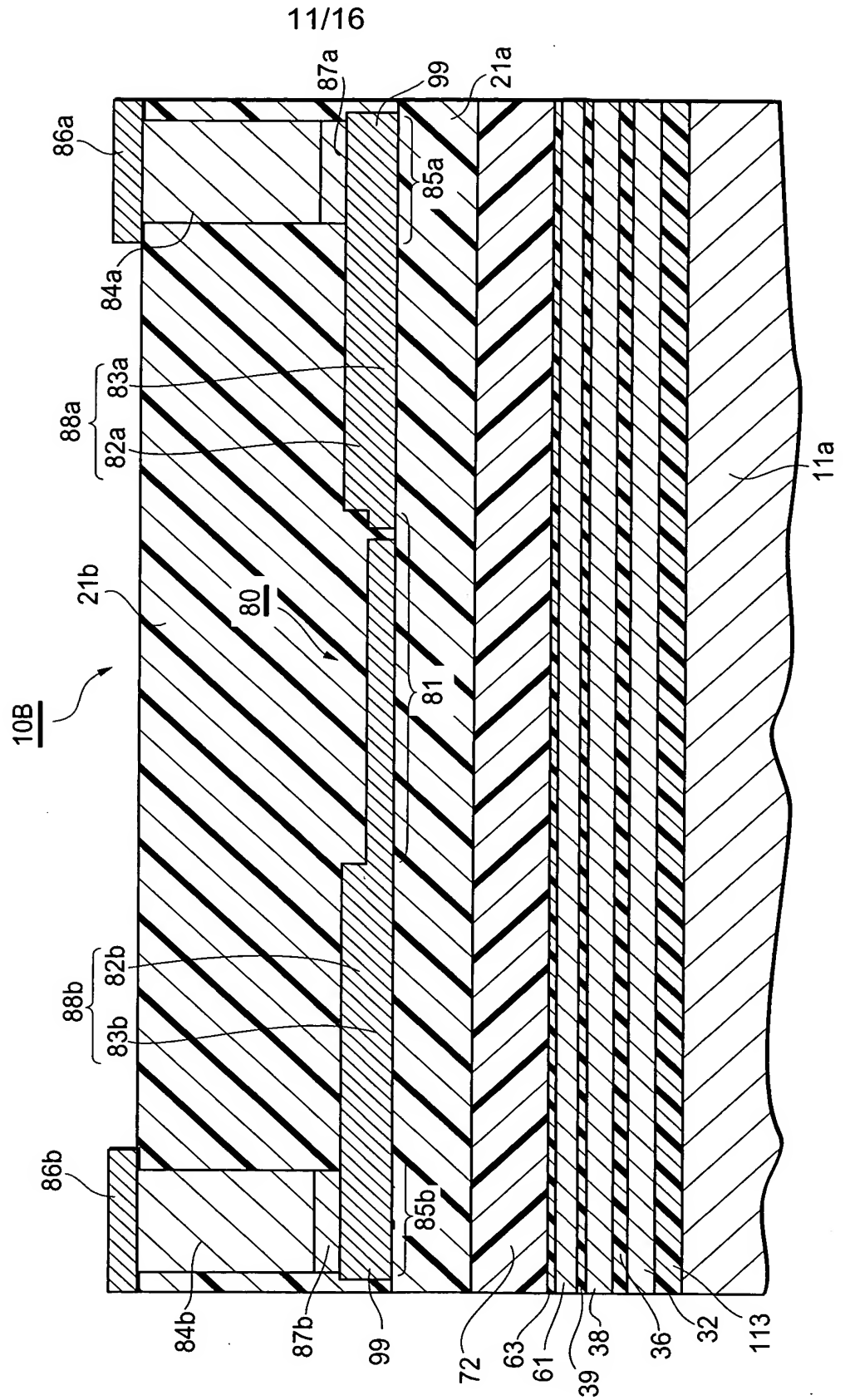
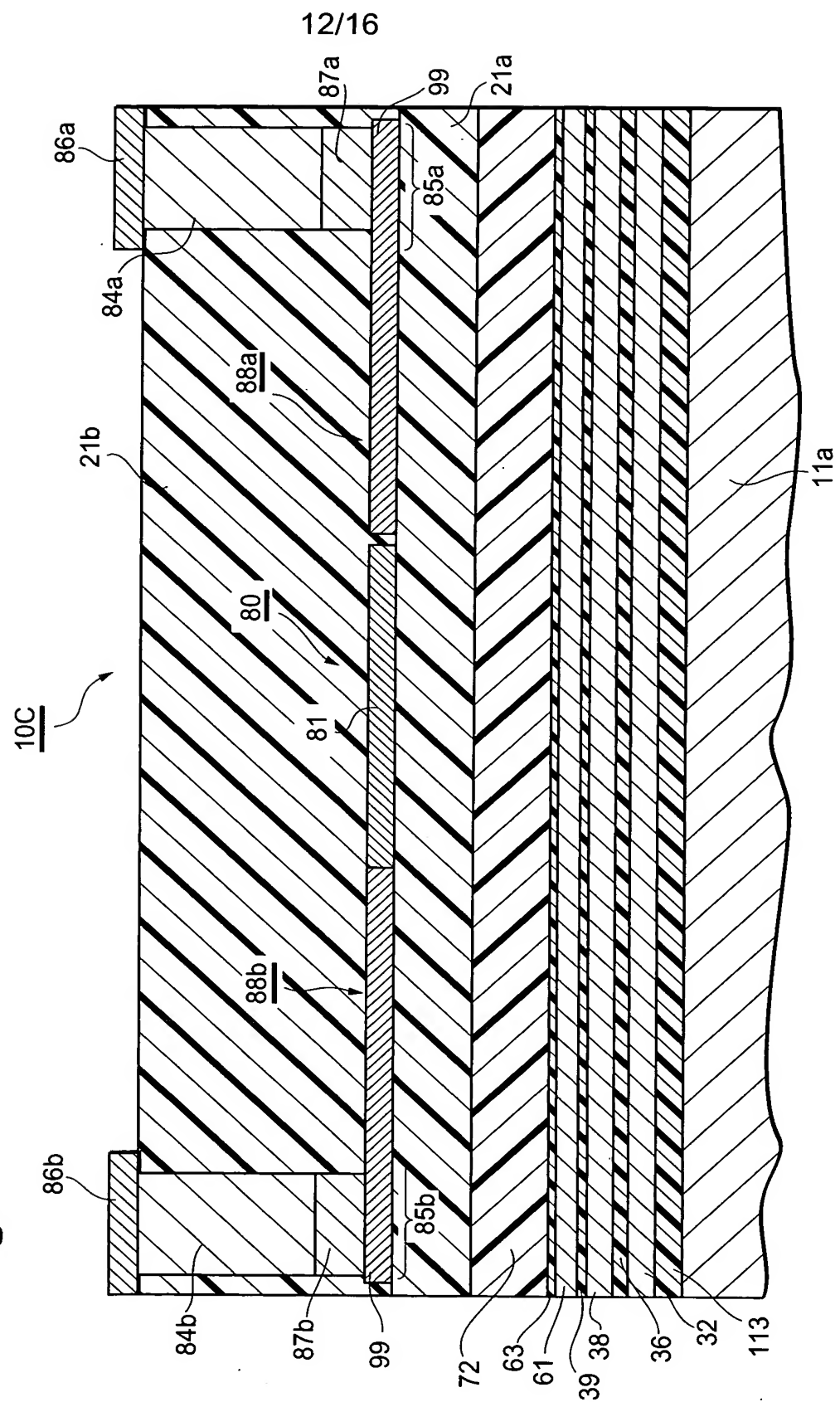
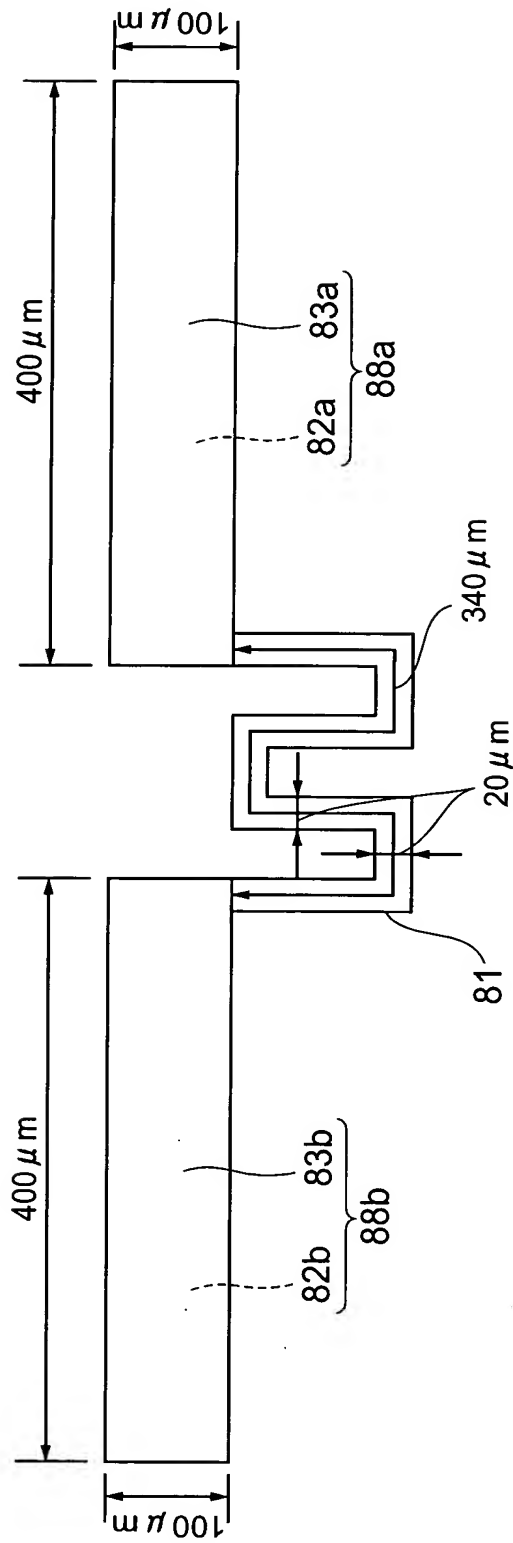


Fig.12



**Fig. 13**



**Fig. 14**

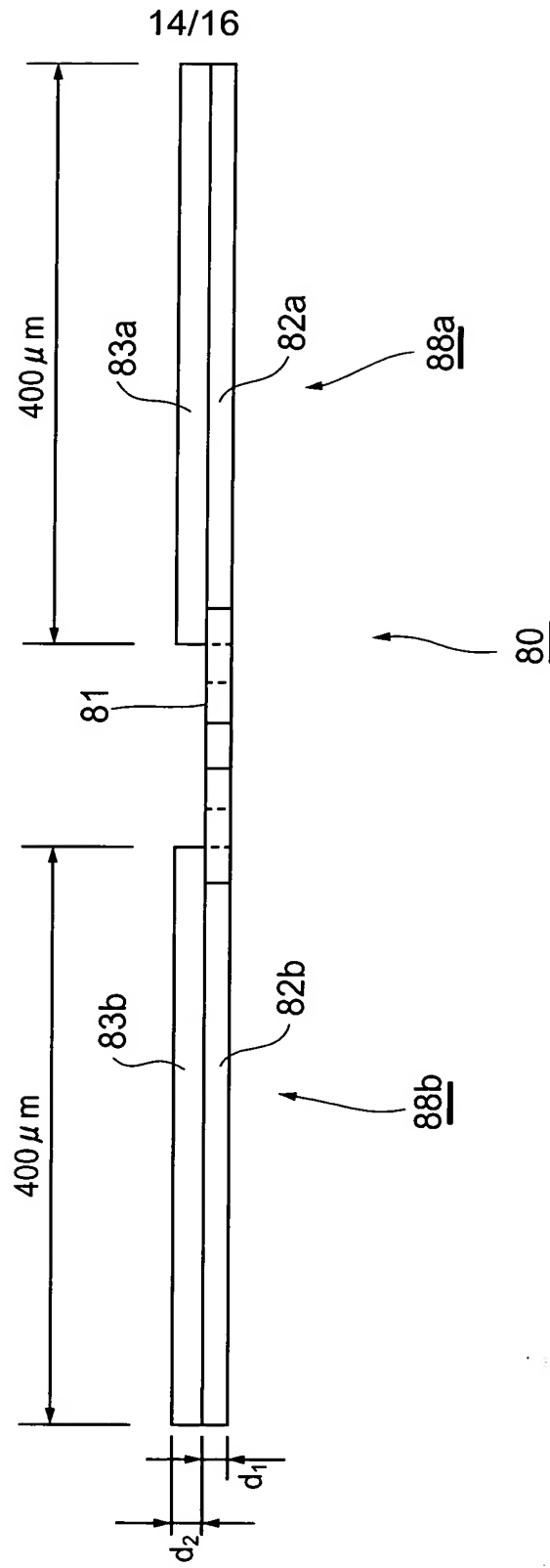


Fig.15

	MATERIAL FOR HP & BP	RESISTIVITY OF HP & BP: $\rho_1$ [ $\mu\Omega\cdot\text{cm}$ ]	THICKNESS OF HP & BP: $d_1$ [nm]	SHEET RESISTANCE OF HP & BP: SR1 [ $\Omega$ ]	MATERIAL FOR ACL	RESISTIVITY OF ACL: $\rho_2$ [ $\mu\Omega\cdot\text{cm}$ ]	THICKNESS OF ACL: $d_2$ [nm]	SHEET RESISTANCE OF ACL: SR2 [ $\Omega$ ]	SR2/SR1 [—]	SHEET RESISTANCE OF LP: SR3 [ $\Omega$ ]	RESISTANCE OF HP [ $\Omega$ ]	TOTAL RESISTANCE OF LP [ $\Omega$ ]	HP'S POWER CONSUMPTION / TOTAL POWER CONSUMPTION [%]
COMP.EX1	NiFe	23	150	1.53	—	—	—	—	—	1.53	26.1	12.3	68.0
EX.1	NiFe	23	150	1.53	NiFe	23.0	100	2.30	1.50	0.92	26.1	7.4	78.0
EX.2	NiFe	23	150	1.53	NiFe	23.0	200	1.15	0.75	0.66	26.1	5.3	83.2
EX.3	NiFe	23	150	1.53	CoFe	20.0	93	2.15	1.40	0.90	26.1	7.2	78.4
EX.4	NiFe	23	150	1.53	CoFe	20.0	100	2.00	1.30	0.87	26.1	6.9	79.0
EX.5	NiFe	23	150	1.53	CoFe	20.0	108.5	1.84	1.20	0.84	26.1	6.7	79.6
EX.6	NiFe	23	150	1.53	CoFe	20.0	131	1.53	1.00	0.77	26.1	6.1	81.0
EX.7	NiFe	23	150	1.53	CoFe	20.0	162	1.23	0.81	0.68	26.1	5.5	82.7
EX.8	NiFe	23	150	1.53	CoFe	20.0	200	1.00	0.65	0.61	26.1	4.8	84.3
EX.9	NiFe	23	150	1.53	Mo	16.0	100	1.60	1.04	0.78	26.1	6.3	80.6
EX.10	NiFe	23	150	1.53	Mo	16.0	173	0.92	0.60	0.58	26.1	4.6	85.0
EX.11	NiFe	23	150	1.53	Mo	16.0	200	0.80	0.52	0.53	26.1	4.2	86.1
EX.12	NiFe	23	150	1.53	Mo	16.0	255	0.63	0.41	0.45	26.1	3.6	88.0
EX.13	NiFe	23	150	1.53	Rh	17.5	100	1.75	1.14	0.82	26.1	6.5	79.9
EX.14	NiFe	23	150	1.53	Rh	17.5	200	0.88	0.57	0.56	26.1	4.5	85.4
EX.15	NiFe	23	150	1.53	Au	3.5	100	0.35	0.23	0.28	26.1	2.3	92.0
EX.16	NiFe	23	150	1.53	Au	3.5	200	0.18	0.11	0.16	26.1	1.3	95.4
EX.17	NiFe	23	150	1.53	Cu	3.0	100	0.30	0.20	0.25	26.1	2.0	92.9
EX.18	NiFe	23	150	1.53	Cu	3.0	200	0.15	0.10	0.14	26.1	1.1	96.0

HP: HEATING PART      BP: BASE PART      ACL: ADDITIONAL CONDUCTIVE LAYER      LP: LEAD PART

Fig.16

	MATERIAL FOR HP & BP	RESISTIVITY OF HP & BP $\rho_1$ : [ $\mu\Omega\cdot\text{cm}$ ]	THICKNESS OF HP & BP: $d_1$ [nm]	SHEET RESISTANCE OF HP & BP: SR1 [ $\Omega$ ]	MATERIAL FOR ACL	RESISTIVITY OF ACL: $\rho_2$ [ $\mu\Omega\cdot\text{cm}$ ]	THICKNESS OF ACL: $d_2$ [nm]	SHEET RESISTANCE OF ACL: SR2 [ $\Omega$ ]	SR2/SR1 [—]	SHEET RESISTANCE OF LP: SR3 [ $\Omega$ ]	RESISTANCE OF HP [ $\Omega$ ]	TOTAL RESISTANCE OF LP [ $\Omega$ ]	HP'S POWER CONSUMPTION/ TOTAL POWER CONSUMPTION [%]
COMP. EX.2	CoFe	20	150	1.33	—	—	—	—	—	1.33	22.7	10.7	68.0
EX.19	CoFe	20	150	1.33	CoFe	20.0	100	2.00	1.50	0.80	22.7	6.4	78.0
EX.20	CoFe	20	150	1.33	Rh	17.5	100	1.75	1.31	0.76	22.7	6.1	78.9
EX.21	CoFe	20	150	1.33	Mo	16.0	100	1.60	1.20	0.73	22.7	5.8	79.6
EX.22	CoFe	20	150	1.33	Au	3.5	100	0.35	0.26	0.28	22.7	2.2	91.1
EX.23	CoFe	20	150	1.33	Cu	3.0	100	0.30	0.23	0.24	22.7	2.0	92.0

HP: HEATING PART      BP: BASE PART      ACL: ADDITIONAL CONDUCTIVE LAYER      LP: LEAD PART